

Please Scan INFORMAL EXAMINER'S  
AMENDMENT

- 1 -

DEVICE AND METHOD FOR DELIVERY OF LONG  
WAVELENGTH LASER ENERGY TO A TISSUE SITE

**Cross-Reference to Related Application**

5

This application is a continuation-in-part of copending U.S. Patent Application No. 10/324,897, filed on December 20, 2002.

6/18/01  
11/21/01

10

**Field of the Invention**

The present invention relates to laser energy delivery devices and their method of use in an aqueous environment. More particularly, the invention relates to laser energy delivery devices useful for delivering laser energy at wavelengths of about 1,300 to 11,000 nanometers, to a body tissue site with reduced interference from surrounding aqueous fluid media.

**Background of the Invention**

15

Lasers that emit light energy at wavelengths in the range of about 1,300 to about 11,000 nanometers (long wavelength or "LW" laser energy) are excellent vaporizers of tissue, since their energy is highly absorbed by water, a major constituent of mammalian tissue. When exposed to such long wavelength laser energy, the water in the tissue is rapidly heated and converted to steam, causing ablation or vaporization of the tissue. These properties make long wavelength lasers particularly useful for nonsurgical removal or reduction of tissue.

20

Typically, laser energy is delivered to a tissue site via an optical fiber or an optical wave guide device adapted for transmission of long wavelength laser energy. The emitting end of the fiber optic or wave guide is placed in close proximity to the desired tissue site. An endoscope is first positioned inside a duct, body cavity, hollow organ or surgically created passageway at the tissue site. The energy emitting end of the optical fiber or wave guide is then threaded through a channel in the endoscope to place the emitting end of the optical fiber or wave guide in the optical position near the tissue. Typically a fiber optic viewing device is also positioned at the working end of the endoscope to view the tissue site as it is being irradiated with laser light energy and to verify the correct positioning of the emitted laser energy.

25

30